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<p>(21) International Application Number: PCT/GB91/01472</p> <p>(22) International Filing Date: 30 August 1991 (30.08.91)</p> <p>(30) Priority data: 9019030.7 31 August 1990 (31.08.90) GB</p> <p>(71)(72) Applicant and Inventor: INSTANCE, David, John [GB/GB]; Guinea Hall, Sellindge, Kent TN25 6EG (GB).</p> <p>(74) Agent: JENKINS, Peter, David; Page White & Farrer, 54 Doughty Street, London WC1N 2LS (GB).</p> <p>(81) Designated States: AT (European patent), BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US.</p>		<p>Published <i>With international search report.</i></p>
<p>(54) Title: LABELS AND MANUFACTURE THEREOF</p> <div style="text-align: center; margin: 20px 0;"> <p>The diagram illustrates a self-adhesive label (10) in a partially unfolded state. It consists of a multilaminar folded label (8) which is divided into two main portions: a first portion (12) and a second portion (14). The first portion (12) is shown as a shaded rectangular area, while the second portion (14) is shown as a dashed rectangular area. The label is attached to a backing of release material (2) or a self-adhesive support piece (4) via a first region (4) of permanent adhesive and a second region (6) of resealable adhesive. The label is shown in a folded configuration, with the first portion (12) and second portion (14) being adjacent to each other. The label is also shown in a partially unfolded state, revealing the internal structure of the multilaminar folded label (8). The label is shown in a perspective view, with the first portion (12) and second portion (14) being adjacent to each other. The label is shown in a perspective view, with the first portion (12) and second portion (14) being adjacent to each other.</p> </div> <p>(57) Abstract</p> <p>A self-adhesive label (10) comprising a multilaminar folded label (8) which comprises first (12) and second portions (14) which are adhered to a backing of release material (2) or to a self-adhesive support piece carried on a backing of release material by a first region (4) of permanent adhesive and a second region (6) of resealable adhesive respectively.</p>		

LABELS AND MANUFACTURE THEREOF.

The present invention relates to a self-adhesive label and to a method of producing a succession of self-adhesive labels carried on a backing of release material.

It is known to provide resealable multilaminar labels which, after they have been adhered to a product, can be opened to reveal previously hidden surfaces.

The present invention aims to provide an improved such label and an improved method of manufacturing such labels.

Accordingly, the present invention provides a self-adhesive label comprising a multilaminar folded label which comprises first and second portions which are adhered to a backing of release material or to a self-adhesive support piece carried on a backing of release material by a first region of permanent adhesive and a second region of resealable adhesive respectively.

The present invention also provides a method of producing a succession of self-adhesive labels carried on a backing of release material, the method comprising the steps of:-

(a) applying to a backing of release material or to a self-adhesive support piece carried on a backing of release material a succession of first regions of permanent adhesive and a succession of second regions of resealable adhesive; and

(b) disposing a succession of multilaminar folded labels to the adhesive regions whereby each multilaminar folded label is adhered to the backing of release material or to the self-adhesive support piece by one of the first regions of adhesive and by one of the second regions of adhesive.

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The present invention further provides a self-adhesive label comprising a multilaminar folded booklet having a front cover, a rear cover and at least one sheet between the front and rear covers, the front cover and the rear cover being adhered to a backing of release material by respective first and second spaced regions of adhesive, and a weakened tear line which is located between the front and rear covers whereby the front cover and the at least one sheet are removable from the rear cover by tearing along the weakened tear line.

The present invention still further provides a method of producing a succession of self adhesive labels carried on a web comprising a backing of release material, the method comprising the steps of:-

- (a) applying to a backing of release material a succession of first and second regions of adhesive;
- (b) disposing a succession of multilaminar folded labels to the adhesive regions whereby each multilaminar folded label is adhered to the backing of release material by a pair of the first and second regions of adhesive.

Embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings, in which:-

Figure 1 is a plan view of a length of a backing of release material carrying adhesive regions and self-adhesive labels in accordance with a first embodiment of the present invention;

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Figure 2 is an elevational view of the self-adhesive label shown in Figure 1;

Figure 3 is a schematic perspective view of an apparatus for use in a method of producing labels in accordance with a second embodiment of the present invention;

Figure 4 is an elevational view of the self-adhesive label made by the method shown in Figure 3;

Figure 5 is an elevational view of a self-adhesive label in accordance with a third embodiment of the present invention;

Figure 6 is an elevational view of a self-adhesive label in accordance with a fourth embodiment of the present invention; and

Figure 7 is a schematic perspective view of the production of labels in accordance with a fifth embodiment of the present invention.

Referring to Figure 1, there is shown a length of a backing 2 of release material which has had applied thereto a succession of first regions 4 of permanent adhesive and a succession of second regions 6 of resealable adhesive. Typically, the permanent and resealable adhesives are hot melt adhesives. Each second region 6 of resealable adhesive is disposed longitudinally substantially adjacent a respective first region 4 of permanent adhesive whereby the first and

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second regions 4,6 are oriented in pairs of those regions 4,6. The regions 4,6 of adhesive are printed or otherwise applied directly to the backing 2 of release material and the regions 4,6 are applied either simultaneously or successively in any order. In the manufacture of the self-adhesive labels in accordance with the first embodiment of the present invention, the backing 2 of release material carrying the successions of pairs of regions, 4,6 is passed to a label applying station (not shown) at which multilaminar folded labels 8 are successively applied to the adhesive regions 4,6 whereby each applied label 8 covers a respective pair of regions 4,6. The labels 8 are dimensioned so as entirely to cover the respective pair of adhesive regions 4,6 so that no free adhesive is exposed. The backing 2 of release material carrying the adhered labels 8 forming the resultant self-adhesive labels 10 thereon is then wound into a reel.

A self-adhesive label 10 in accordance with the first embodiment is shown in greater detail in Figure 2. It will be seen that the multilaminar folded label 8 comprises a first portion 12 which is adhered to the first region 4 of adhesive and a second portion 14 which is adhered to the second region 6 of adhesive. The first portion 12 comprises a rear panel of the multilaminar folded label 8 and the second portion 14 comprises an overlapping flap of a front panel 16 of the folded label. In the illustrated embodiment additional panels 18 are disposed between the rear 12 and front 16 panels.

In use, the self-adhesive label 10 is removed from the backing 2 of release material and then the self-adhesive label 10 is adhered to a product to be labelled by the first and second regions 4,6 of adhesive. When it is desired to open the multilaminar folded label 8, a user pulls the overlapping flap 14 away from the product thereby to release the flap 14 from the product at the interface with the

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resealable adhesive region 6. The main body of the self-adhesive label 10 remains permanently adhered to the product by means of the first region 4 of permanent adhesive. After the additional panels 18 have been read by a user, the overlapping flap 14 can be re-adhered to the product by means of the second region 6 of resealable adhesive.

A second embodiment of the present invention is shown in Figures 3 and 4. Referring to Figure 3, in the manufacture of the self-adhesive labels 20 of the second embodiment, a succession of multilaminar folded labels 22 is applied to a succession of pairs of first regions 24 of permanent adhesive and second regions 26 of resealable adhesive in the manner described hereinabove with reference to Figures 1 and 2. In this embodiment however, the applied multilaminar folded labels 22 are smaller in dimensional area than the regions defined by the first and second regions 24,26 of adhesive whereby respective parts 28,30 of the first and second regions 24,26 are left exposed and those parts 28,30 surround the applied multilaminar folded label 22. As in the first embodiment, a first portion 32, comprising a rear panel, of the folded label 22 is adhered to the first region 24 and a second portion 34, comprising an overlapping flap of a front panel 36 of the folded label 22, is adhered to the second region 26 of adhesive. Each region 24,26 of adhesive extends beyond the longitudinally directed edges of the applied label 22. The regions 24,26 of adhesive adhere the label 22 to a backing 38 of release material.

The label 22 adhered to the backing 38 of release material is passed to a laminar material applying station 40 at which a laminar material 42, which comprises a transparent plastics web e.g. of polyester, is urged by a roller 44 over the succession of applied labels 22 and of regions 24,26 of adhesive. The rearwardly-directed surface of the laminar

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material 42 is adhered to the exposed parts 46,48 of the first and second portions 24,26. The combined assembly then passes to a die-cutting station 50 at which the assembly is passed between an upper die-cutting roller 52 and a lower backing roller 54. The die-cutting roller 52 is adapted to cut out from the laminar material 42 and the multilaminar folded label 22, a self-adhesive label 20 which remains on the backing 38 of release material. The waste web remnant 56 is removed. In the die-cutting step two transversely oriented cuts are made through the laminar material 42, one cut being upstream and the other cut being downstream of the respective multilaminar folded label 22. In the die-cutting step additionally two longitudinal cuts are made through the laminar material 42 and through the applied multilaminar folded label 22. The waste web remnant 56 comprises the excess laminar material 42 and in addition the cut-away longitudinal edges of the multilaminar folded label 22 and the extraneous adhesive from the regions 24,26.

The resultant self-adhesive label is shown in Figure 4 from which it will be seen that the folded label portion 58 which has been cut from the original multilaminar folded label 22 is adhered by respective areas 60,62 of the original first and second regions 24,26 of adhesive to the backing 38 of release material. A laminar material portion 64 covers the folded label portion 58 and has first and second opposed edge regions 66,68 thereof which extend past respective edges 70,72 of the label portion 58. The first and second edge regions 66,68 are respectively adhered to the backing 38 of release material by the first and second areas 60,62 of the adhesive regions 24,26. Thus the laminar material portion 64 is retained in a closed configuration by the adhesion of the opposed edge regions 66,68 to the backing 38 of release material. The laminar material portion 64 covers the entire self-adhesive label 20 and protects the label 20 from damage or soiling. An overlapping flap 74 of the front cover panel

is adhered to the area 62 of resealable adhesive. The label of Figure 4 may be modified by shortening the front cover panel thereby removing the overlapping flap whereby the folded label portion is itself only adhered to the adhesive area 60 and it is only the laminar material portion 64 which is adhered to the area 62 of resealable adhesive.

In use, when it is desired to label a product the self-adhesive label 20 is stripped off from the backing 38 of release material e.g. by an automatic labelling machine and the label 20 is adhered to the product by the areas 60, 62 of adhesive. When it is desired to open the label 20 so as to access the hidden inner surfaces, the edge region 68 of the laminar material portion 64 and the overlapping flap 74 are pulled away from the product at the interface with the areas 62 of resealable adhesive. After the label has been read by a user, the overlapping flap 74 and the edge portion 68 of the laminar material portion 64 can be readhered to the product by the area 62 of resealable adhesive.

A third embodiment of the self-adhesive label in accordance with the present invention is illustrated in Figure 5. In this embodiment, a folded label portion 80 is in the form of a booklet having a front cover panel 82 which is longer than the remaining panels so as to define an overlapping flap 84. A back cover panel 86 of the booklet is adhered by a strip 88 of a permanent adhesive which extends adjacent the spine 90 of the booklet to a backing 92 of release material. The free edge 94 of the back cover panel 86 is releasably adhered to the backing 92 of release material by a strip 96 of resealable adhesive which is parallel to the strip 88 of permanent adhesive. The overlapping flap 84 of the front cover panel 82 is adhered to the backing 92 of release material by a second strip 98 of resealable adhesive which is parallel to and spaced from the strip 96. In use, the label 100 is removed from the backing

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92 of release material and adhered to a product to be labelled by the three strips 88, 96 and 98 of adhesive. When it is desired to open the label, a user pulls the overlapping flap away from the product and this strips away the overlapping flap 84 from the strip 98 of resealable adhesive to permit the label to be opened and the inner pages of the booklet to be read. In addition, the rear surface of the back cover panel 86 may be printed with information and in order to access this information the user can pull the edge 94 of the back cover panel 86 away from the strip 96 of resealable adhesive. The edge 94 and the overlapping flap 84 may be readhered if desired to the respective strips 96, 98 of resealable adhesive.

The label 100 may be manufactured by a method substantially the same as that employed to manufacture the label of the first embodiment illustrated in Figures 1 and 2.

A fourth embodiment of a label in accordance with the present invention is illustrated in Figure 6. In this embodiment, a folded label portion 102 in the form of a booklet has a similar construction to that illustrated in Figure 5. This embodiment is modified in that the folded label portion 102 is not adhered directly to a backing of release material but rather the folded label portion 102 is adhered to a support piece 104, typically of paper, which is self-adhesive, being coated on its rear surface with a pressure-sensitive adhesive, and is itself carried on a backing 106 of release material. The booklet 102 has a back cover panel 108 which is adhered adjacent the spine 110 of the booklet to the support piece 104 by a strip 112 of permanent adhesive. A strip 114 of resealable adhesive adheres to the support piece 104 both the free edge 116 of the back cover panel 108 and the overlapping flap 118 of the front cover panel 120. When it is desired to label a

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product, the support piece 104 is stripped off from the backing 106 of release material and adhered by its self-adhesive surface to the product to be labelled. The label 122 can be opened and closed as desired in the manner described hereinabove with reference to the embodiment of Figure 5.

The label of Figure 6 is manufactured in a manner similar to the method of manufacture of the second embodiment illustrated in Figures 3 and 4 except that a laminating procedure is not employed. Strips 112, 114 of adhesive are applied to a self-adhesive support web which is carried on the backing 106 of release material, the self-adhesive support web subsequently being die-cut to form the support pieces 104. After the strips 112, 114 of adhesive have been applied, a succession of folded label portions 102 are applied thereto and then the composite assembly passes to a die-cutting station at which the support web is cut to form the support pieces 104 and also the ultimate self-adhesive labels 122. If desired, in the die-cutting step the applied folded label portions may also be cut either along their longitudinal edges or along the transvers edge which is remote from the spine 110 (the longitudinal and transverse directions being equivalent to those illustrated in Figure 3) and the waste portions of the cut away parts of the applied folded label portions 102 are removed together with the waste web remnant of the support web. This can provide coincident edges of the applied folded label 102 and the support piece 104.

The first, second and third embodiments may be modified by adhering the applied folded label to a self-adhesive support piece carried on a backing of release material rather than to the backing of release material directly. It will be readily apparent to the man skilled in the art how this may be achieved.

A fifth embodiment of the present invention is illustrated in Figure 7. A succession of first regions 130 and second regions 132 of adhesive are applied to a web of a backing of release material 134. In this embodiment, the adhesive of the first and second regions 130, 132 may be the same type of adhesive, typically permanent hot melt adhesive. The disposition of the regions of adhesive is substantially the same as that in the first embodiment illustrated in Figure 1. Subsequently, at a label applying station a multilaminar booklet 136 is applied over and adhered to the first and second regions of adhesive 130, 132 so as to completely to cover those regions. The booklet 136 includes a front cover 138 and rear cover 140 and at least one sheet 142 disposed therebetween. The first weakened tear line 144 comprising a line of perforations which extends between the front and rear covers 138, 140 whereby if the weakened tear line 144 is torn the front cover 138 and the at least one sheet 142 can be detached from the rear cover 140. Thus, when the rear cover 140 is adhered to a product to be labelled by the region 130 of adhesive, the body of the folded booklet can be detached from the rear cover 140 leaving the rear cover 140 attached to the product. A pair of second weakened tear lines 146 are constituted by perforation lines which extend across the front cover 138 so as to separate the front cover 138 into an end portion 148 which is adhered to the backing 134 of release material by the second region 132 of adhesive and a body portion 150 which is disposed above the at least one sheet 142 and the rear cover 140. Tearing along the second weakened tear lines 146 permits the folded booklet 136 to be opened when the folded booklet 136 is adhered to a product to be labelled so as to enable the at least one sheet 142 and the rear cover 140 to be accessed.

It is possible for the booklet 136 to comprise the entire self-adhesive label. However, in the illustrated embodiment the booklet 136 actually constitutes two separate labels. The two separate labels are formed by longitudinally slitting along a slitting line 152. The slitting line 152 extends coextensively through the booklet 136 so as to divide the booklet 136 into booklet portions 154, 156 and through the backing 134 of release material so as to divide the backing 134 into backing portions 158, 160. The waste at the longitudinal edges of the composite booklet/backing assembly, the waste consisting of cut-away portions of both the backing 134 and the applied booklet 136, is removed. Thus, in the illustrated embodiment a pair of webs is formed, each comprising a succession of booklet portions being carried on a backing of release material. The booklet portions 154, 156 may be removed from the respective web 158, 160 and adhered to a product to be labelled by the respective portions of the first and second regions 130, 132 of adhesive. When it is desired to open each label, the front cover portion is torn along the second weakened tear lines 146 so as to enable the label to be opened. Subsequently, the front cover portion and the at least one sheet portion may be torn away from the rear cover portion by tearing along the first tear line 144.

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CLAIMS.

1. A self-adhesive label comprising a multilaminar folded label which comprises first and second portions which are adhered to a backing of release material or to a self-adhesive support piece carried on a backing of release material by a first region of permanent adhesive and a second region of resealable adhesive respectively.
2. A self-adhesive label according to claim 1 wherein the first portion comprises a rear panel of the folded label and the second portion comprises an overlapping flap of a first panel of the folded label.
3. A self-adhesive label according to claim 1 or claim 2 further comprising a laminar material which covers the folded label and has first and second opposed edge regions thereof which extend past respective edges of the first and second portions, the first and second edge regions being respectively adhered to the backing of release material by the first and second regions of adhesive.
4. A self-adhesive label according to claim 2 wherein the first region comprises a strip of permanent adhesive which is adhered adjacent to a folded edge of the folded label and the second region is also adhered to a free edge of the rear panel which is remote from the folded edge.
5. A self-adhesive label according to claim 4 wherein the second region comprises two strips of resealable adhesive, one of which is adhered to the free edge and the other of which is adhered to the overlapping flap.
6. A method of producing a succession of self-adhesive labels carried on a backing of release material, the method comprising the steps of:-

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(a) applying to a backing of release material or to a self-adhesive support piece carried on a backing of release material a succession of first regions of permanent adhesive and a succession of second regions of resealable adhesive; and

(b) disposing a succession of multilaminar folded labels to the adhesive regions whereby each multilaminar folded label is adhered to the backing of release material or to the self-adhesive support piece by one of the first regions of adhesive and one of the second regions of adhesive.

7. A method according to claim 6 wherein the first and second regions are oriented in pairs of those regions and are substantially adjacent each other.

8. A method according to claim 7 wherein the multilaminar folded labels are disposed so as completely to cover a respective pair of first and second regions.

9. A method according to claim 6 or claim 7 wherein the succession of multilaminar folded labels are disposed such that parts of the first and second regions are left exposed and further comprising the steps of:-

(c) applying a laminar material over the succession of multilaminar folded labels whereby the laminar material is adhered to the exposed parts of the first and second regions; and

(d) cutting through the laminar material and through the applied multilaminar labels to form the self-adhesive labels, the cutting being preformed whereby each self-adhesive label includes a portion of the laminar material which is adhered at opposed first and second edge regions thereof to the first and second regions of adhesive respectively.

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10. A self-adhesive label comprising a multilaminar folded booklet having a front cover, a rear cover and at least one sheet between the front and rear covers, the front cover and the rear cover being adhered to a backing of release material by respective first and second spaced regions of adhesive, and a weakened tear line which is located between the front and rear covers whereby the front cover and the at least one sheet are removable from the rear cover by tearing along the weakened tear line.

11. A self-adhesive label according to claim 10, further comprising at least one second weakened tear line which extends across the front cover which separates the front cover into an end portion which is adhered by the first region of adhesive to the backing of release material and a body portion which is disposed over the at least one sheet.

12. A method of producing a succession of self adhesive labels carried on a web comprising a backing of release material, the method comprising the steps of:-

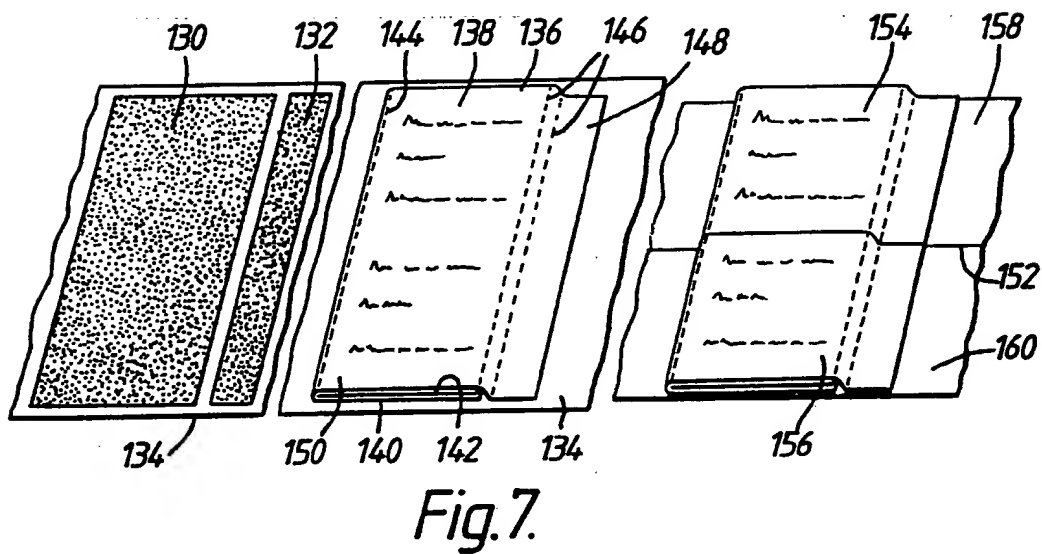
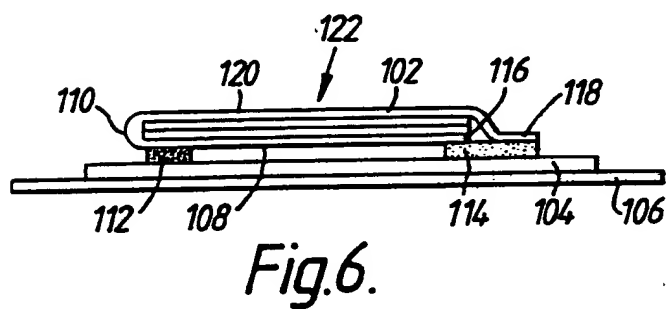
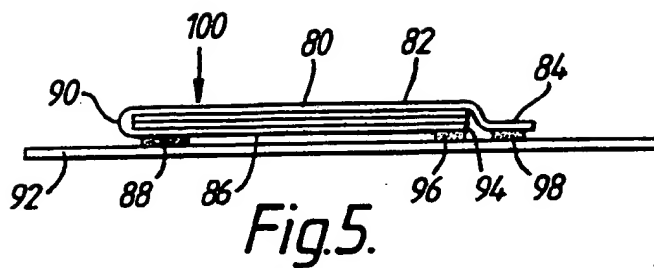
(a) applying to a backing of release material a succession of first and second regions of adhesive;

(b) disposing a succession of multilaminar folded labels to the adhesive regions whereby each multilaminar folded label is adhered to the backing of release material by a pair of the first and second regions of adhesive.

13. A method according to claim 12, further comprising the step, after step (b), of cutting each multilaminar label and the backing of release material whereby each multilaminar label is cut into a plurality of cut labels and the backing of release material is cut into a corresponding plurality of cut webs so that each cut web of release material carries a succession of the cut labels.

SUBSTITUTE SHEET

2/2



INTERNATIONAL SEARCH REPORT

PCT/GB 91/01472

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int.Cl. 5 G09F3/02; B31D1/02		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	G09F ; B31D	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	EP,A,0 346 567 (CHALCOGRAPHIA) 20 December 1989 see column 3, line 37 - column 4, line 44; figures 1,2,4	1-4,12
Y	---	10,11
Y	EP,A,0 087 987 (D.INSTANCE) 7 September 1983 see page 7, line 12 - page 8, line 13; figure 4	10,11
A	---	1-12
A	EP,A,0 130 053 (D.INSTANCE) 2 January 1985 see page 11, line 29 - page 12, line 21; figures 1-5	
A	---	
A	EP,A,0 252 608 (D.INSTANCE) 13 January 1988	
<p>¹⁰ Special categories of cited documents : ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
25 NOVEMBER 1991	23.12.91 G. Gallo	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	GALLO G.G.	

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9101472
SA 51157

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on
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